Author Index to Volume XII

Acs, G.
—; Peter, A.; Huhn, P.: Rate Coefficients of Decomposition of Azoethane and Azoisopropane, 993
Adachi, H.
—; Basco, N.; James, D. G. L.: Mutual Interactions of the Methyl and Methylperoxy Radicals Studied by Flash Photolysis and Kinetic Spectroscopy, 949
—; Basco, N.: The Reaction of CH_3O_2 Radicals with NO_2, 1
Alfassi, Z. B.
—; Feldman, L.: Kinetics of Radiation-Induced Abstraction of Hydrogen Atoms by CCl_3 Radicals in the Liquid Phase: 2,3-Dimethylbutane, 379
The Rate Constant for Combination of a CCl_3 Radical with Cyclohexyl or *n*-Hexyl Radicals. An Evidence for the Value of the Rate Constant for a Cl Atom Transfer, 217
Allara, D. L. See Edelson, D., 605
Allston, T. D. See Taylor, W. D., 231
Alway, R. M. See Houser, T. J., 569
Anand, B. H.
—; Menghani, G. D.: Kinetics of Oxidation of Butane 2,3-Diol by Osmium (VIII), 225
Anderson, P. C. See Klais, O., 469
Araya, D. See Lissi, E. A., 871
Arustamyan, A. M.
—; Shakhnazaryan, I. K.; Philiposayan, A. G.; Nalbandyan, A. B.: The Kinetics and the Mechanism of the Oxidation of Carbon Monoxide in the Presence of Hydrogen, 55
Asaba, T. See Yumura, M., 439
Atkinson, R.
—; Carter, W. P. L.; Darnall, K. R.; Winer, A. M.; Pitts, J. N., Jr.: A Smog Chamber and Modeling Study of the Gas Phase NO_x–Air Photooxidation of Toluene and the Cresols, 779
Comments on "Predicting Gas Phase Organic Molecule Reaction Rates using Linear Free Energy Correlations. I. $O(^3P)$ and OH Addition and Abstraction Reactions" (Communication), 761

Back, M. H. See Lalonde, P. J., 301
Baiocchi, C.
—; Mentasti, E.: Kinetics of Oxidation of Organic Compounds by Silver(II) in Aqueous Perchloric Acid Solution. IV. Aliphatic Alcohols, 285
Barroeta, N. See Martin, G., 699
Bartocci, C. See Maldotti, A., 905
Baruch, G. See Horowitz, A., 883
Basco, N. See Adachi, H., 1, 949
Benson, S. W.
On the Reaction between Ethylene and Cyclopentene, A Radical Mechanism, 755
See Nangia, P. S., 29, 43, 169; Weissman, M., 403
Berces, T.
—; Dombi, J.: Evaluation of the Rate Coefficients and Arrhenius Parameters of Hydrogen Atom Transfer Reactions. I. The Method, 123
—; Dombi, J.: Evaluation of the Rate Coefficients and Arrhenius Parameters of Hydrogen Atom Transfer Reactions. II. Application of the Method, 183
Bielling, K. See Stevens, C. M., 935
Biftu, T. See Houser, T. J., 555, 569
Bignozzi, C. A. See Maldotti, A., 905
Boiveaut, A. See Richard, C., 921
Bol'Shakov, B. V.
—; Stepanov, A. A.; Tolkatchev, V. A.: The $\sqrt{t}$ Law in Solid-Phase Reactions Verification of the $\sqrt{t}$ Law Stability in H-Atom Abstraction Reactions, 271
Breitenbach, L. P. See Niki, H., 915, 1001
Brummer, J. G. See Herbine, P., 393
Brusa, M. A.
—; Colussi, A. J.: The Kinetics and Mechanism of the Oxidation of Formic Acid by Bromine in Acid Aqueous Media, 1013
Bunton, C. A.
—; Cerichelli, G.: Micellar Effects upon Electron Transfer from Ferrocenes, 519
Burshtein, A. I.
—; Yakobson, B. I.: A Modified Model of Diffusion-Controlled Reactions, 261

Carassiti, V. See Maldotti, A., 905
Carter, W. P. L. See Atkinson, R., 779
Cerichelli, G. See Bunton, C. A., 519
Chiorboli, C. See Maldotti, A., 905
Clyne, M. A. A.
—; Macrobert, A. J.: Kinetic Studies of Free Radical Reactions by Mass Spectrometry. I. The Reactions SO + NO_2 and ClO + NO, 79
Cohen, S. See Stevens, C. M., 935
Collin, G. J.
—; Deslauriers, H.: The Vacuum UV Photolysis of Various C_4 and C_5 Olefins: The Energy Content of the α- and β-Methallyl Fragments, 17
Colussi, A. J. See Brusa, M. A., 1013
Compton, M. See Stevens, C. M., 935
Cooke, D. O.
On the Effect of Copper (II) and Chloride Ions on the Iodate-Hydrogen Peroxide Reaction in the Presence and Absence of Manganese (II), 671
The Hydrogen Peroxide–Iodic Acid–Manganese (II)–Acetone Oscillating System: Further Observations, 683
Coombe, R. D. See Pritt, A. T., Jr., 741
Cox, R. A.
Kinetics of the Reaction Cl + HO_2 = HCl + O_2, using Molecular Modulation Spectrometry, 649

Daly, N. J.
—; Ziolkowski, F.: The Thermal Decompositions of Carbamates. IV. The Ethyl *N*-Methyl-Carbamate System, 241
Darnall, K. R. See Atkinson, R., 779
Deslauriers, H. See Collin, G. J., 17
Dombi, J. See Berces, T., 123, 183
Durban, P. C.
—; Marshall, R. M.: Photolysis of Azomethane–Propane Mixtures. Arrhenius Parameters for the Hydrogen Abstraction Reactions of Methyl with Azomethane and with Propane, 1031
Durkee, S. See Stevens, C. M., 935
Dzarnoski, J. See Newman, C. G., 661

Edelson, D.
—; Allara, D. L.: A Computational Analysis of the Alkane Pyrolysis Mechanism: Sensitivity Analysis of Individual Reaction Steps, 605
Ekwenchi, M. M.
—; Jodhan, A.; Strausz, O. P.: Reaction of Hydrogen Atoms with Dimethyldisulfide, 431

Fazekas, G. B. See Taylor, W. D., 231
Feldman, L. See Alfassi, Z. B., 379
Field, R. J. See Herbine, P., 393
Florine, B. See Reynolds, W. L., 97
Franklin, T. C.
—; Ogiya, N.: Ion Pair Catalysis of the Autooxidative Cleavage of Benzoin in Emulsion Systems, 1045
—; Ogiya, N.: Ion Pair Catalysis of the Autooxidation of Pyridine and Benzil in Emulsion Systems, 1055
Frenklach, M. See Lifshitz, A., 159

Gaffney, J. S.
—; Levine, S. Z.: Reply to "Comments on 'Predicting Gas Phase Organic Molecule Reaction Rates using Linear Free Energy Correlations. I. $O(^3P)$ and OH Addition and Abstraction Reactions' " (Communication), 767
Gajl, M. See Mikolajczyk, M., 979
Ganesan, R. See Sivakamasundari, S., 837
Gilbert, R. G. See King, K. D., 339
Gore, P. H.
—; Nassar, A. M. G.; Waters, D. N.; Moxon, G. F.: A Dual-Path Sequence of First-Order Reactions The Protiodeacylation of Acetylpropionylmesitylene, 107
Gorse, R. See Stevens, C. M., 935

Hack, W.
—; Preuss, A. W.; Temps, F.; Wagner, H. GG.: Direct Determination of the Rate Constant of the Reaction $NO + HO_2 \rightarrow NO_2 + OH$ with the LMR, 851
Hamilton, E. J., Jr.
—; Korcek, S.; Mahoney, L. R.; Zinbo, M.: Kinetics and Mechanism of the Autoxidation of Pentaerythrityl Tetraheptanoate at 180–220°C, 577
Harada, S. See Hiraishi, M., 387
Herbine, P.
—; Brummer, J. G.; Field, R. J.: Oxidation of Formic Acid by Bromine in Aqueous, Strongly Acid Media, 393
Hiraishi, M.
—; Harada, S.; Uchida, Y.; Kuo, H. L.; Yasunaga, T.: Aluminium Monoacetate Complex Formation Reaction Studied by the Pressure-Jump Method, 387
Horowitz, A.
—; Baruch, G.: Kinetics and Mechanism of the Addition of Trichloromethyl Radicals to Chloroethylenes. The Addition to *cis*-$C_2Cl_2H_2$, *trans*-$C_2Cl_2H_2$, and C_2Cl_3H, 883
Houser, T. J.
—; Hull, M.; Alway, R. M.; Biftu, T.: Kinetics of Formation of HCN during Pyridine Pyrolysis, 569
—; McCarville, M. E.; Biftu, T.: Kinetics of the Thermal Decomposition of Pyridine in a Flow System, 555
Huhn, P. See Acs, G., 993
Hull, M. See Houser, T. J., 569
Huybrechts, G.
—; Rigaux, D.; Vankeerberghen, J.; Van Mele, B.: Kinetics of the Diels–Alder Addition of Ethene to Cyclohexa-1,3-Diene and Its Reverse Reaction in the Gas Phase, 253

James, D. G. L. See Adachi, H., 949
Jesser, B. See Lippmann, H. H., 547
Jodhan, A. See Ekwenchi, M. M., 431
Johnson, N. See Reynolds, W. L., 97
Jones, J. R.
—; Taylor, S. E.: The Use of Isotopic Hydrogen Exchange in the Study of the Acid-Catalyzed Hydrolysis of Purine Nucleosides (Communication), 141

Kaplan, L. See Stevens, C. M., 935
Kenner, R. D.
—; Ogryzlo, E. A.: Deactivation of $O_2(A^3\Sigma_u^+)$ by O_2, O, and Ar, 501
Khudyakov, I. V. See Levin, P. P., 147
King, K. D.
—; Gilbert, R. G.: The Thermal Unimolecular Decomposition of Bromocyclobutane, 339
Klais, O.
—; Anderson, P. C.; Kurylo, M. J.: A Reinvestigation of the Temperature Dependence of the Rate Constant for the Reaction $O + O_2 + M \rightarrow O_3 + M$ (for M = O_2, N_2, and Ar) by the Flash Photolysis Resonance Fluorescence Technique, 469
Knoll, H.
—; Richter, G.; Schliebs, R.: On the Gas-Phase Free Radical Displacement Reaction $CH_3 + CD_3COCD_3 \rightarrow CD_3 + CH_3COCD_3$, 623
Kooda, K. See Reynolds, W. L., 97
Korcek, S. See Hamilton, E. J., Jr., 577
Kozlowski, R. See Taylor, W. D., 231
Kuo, H. L. See Hiraishi, M., 387
Kurylo, M. J. See Klais, O., 469
Kuzmin, V. A. See Levin, P. P., 147

Lalonde, P. J.
—; Back, M. H.: A Concerted Hydrogen-Transfer Reaction in the Gas Phase, 301
Levin, P. P.
—; Khudyakov, I. V.; Kuzmin, V. A.: Effect of Solvent Viscosity on the Kinetics of Reversible Dimerization of Phenoxy Radicals, 147
Levine, S. Z. See Gaffney, J. S., 767
Lifshitz, A.
—; Frenklach, M.: Oxidation of Cyanogen. II. The Mechanism of the Oxidation, 159

Light, G. C.
—; Matsumoto, J. H.: Experimental Measurement of the Rate of the Reaction $O(^3P) + H_2(v = 0) \rightarrow OH(v = 0) + H$ at $T = 298$ K, 451
Lippmann, H. H.
—; Jesser, B.; Schurath, U.: The Rate Constant of $NO + O_3 \rightarrow NO_2 + O_2$ in the Temperature Range of 283–443 K, 547
Lissi, E. A.
—; Rubio, M. A.; Araya, D.; Zanocco, G.: Reaction of Di-*tert*-Butylnitroxide Radicals, 871

Macrobert, A. J. See Clyne, M. A. A., 79
Mahoney, L. R. See Hamilton, E. J., Jr., 577
Maker, P. D. See Niki, H., 915, 1001
Maldotti, A.
—; Chiorboli, C.; Bignozzi, C. A.; Bartocci, C.; Carassiti, V.: Photooxidation of 1,3-Butadiene Containing Systems: Rate Constant Determination for the Reaction of Acrolein with ·OH Radicals, 905
Marshall, R. M. See Durban, P. C., 1031
Martin, G.
—; Barroeta, N.: Gas Phase Thermolysis of Sulfur Compounds. II. Ditertiary Butyl Sulfide, 699
Martin, R. See Richard, C., 921, 1021
Martinez, R. I.
A Systematic Nomenclature for the "Peroxyacyl Nitrates," the Functional and Structural Misnomers for Anhydride Derivatives of Nitrogen Oxo Acids (Communication), 771
Masterovoi, I. F. See Moshkina, R. I., 315
Matsui, H. See Yumura, M., 439
Matsumoto, J. H. See Light, G. C., 451
Matsumoto, Y. See Yumura, M., 439
Mayanna, S. M. See Uma, K. V., 861
McCarville, M. E. See Houser, T. J., 555
Menghani, G. D. See Anand, B. H., 225
Mentasti, E. See Baiocchi, C., 285
Mikolajczyk, M.
—; Slebocka-Tilk, H.; Gajl, M.; Reimschussel, W.: The Kinetics of the Chlorine Isotopic Exchange Between Chloride Ion at O,O-Diarylphosphorochloridates or O,O-Diarylphosphorochloridothionates, 979
Mizoguchi, I. See Ohta, T., 717
Moscato, M. J. See Taylor, W. D., 231
Moshkina, R. I.
—; Polyak, S. S.; Sokolova, N. A.; Masterovoi, I. F.; Nalbandyan, A. B.: Study of the Ethane Oxidation Reaction by the Kinetic Tracer Method, 315
Moxon, G. F. See Gore, P. H., 107

Nalbandyan, A. B. See Arustamyan, A. M., 55; Moshkina, R. I., 315
Nangia, P. S.
—; Benson, S. W.: Liquid-Phase Oxidation of Isobutane—A Reanalysis of the Data, 169
—; Benson, S. W.: The Kinetics of the Interaction of Peroxy Radicals. I. The Tertiary Peroxy Radicals, 29
—; Benson, S. W.: The Kinetics of the Interaction of Peroxy Radicals. II. Primary and Secondary Alkyl Peroxy, 43
Nassar, A. M. G. See Gore, P. H., 107
Newman, C. G.
—; Dzarnoski, J.; Ring, M. A.; O'Neal, H. E.: Kinetics and Mechanism of the Germane Decomposition, 661
Niki, H.
—; Maker, P. D.; Savage, C. M.; Breitenbach, L. P.: FTIR Studies of the Kinetics and Mechanism for the Reaction of Cl Atom with Formylchloride, 915
—; Maker, P. D.; Savage, C. M.; Breitenbach, L. P.: An FTIR Study of the Cl Atom-Initiated Oxidation of CH_2Cl_2 and CH_3Cl, 1001

Ogiya, N. See Franklin, T. C., 1045, 1055
Ogryzlo, E. A. See Kenner, R. D., 501
Ohta, T.
—; Mizoguchi, I.: Determination of the Mechanism of the Oxidation of the Trichloromethyl Radical by the Photolysis of Chloral in the Presence of Oxygen, 717
Oliver, P.
Consistency of a Set of Chemical Reactions, 509
O'Neal, H. E. See Newman, C. G., 661

Panda, R. See Panigrahi, G. P., 491
Panigrahi, G. P.
—; Panda, R.: Oxidation Studies with Peroxomonophosphoric Acid. II. A Kinetic and Mechanistic Study of Dimethyl Sulfoxide Oxidation in Acid and Alkaline Media, 491
Paul, H.
—; Segaud, C.: Rate Constants for Self- and Cross Terminations of Transient Radicals in Solution by Effect Modulated Electron Spin Resonance Spectroscopy, 637
Peter, A. See Acs, G., 993
Philipossyan, A. G. See Arustamyan, A. M., 55
Pitts, J. N., Jr. See Atkinson, R., 779
Polyak, S. S. See Moshkina, R. I., 315
Preuss, A. W. See Hack, W., 851
Pritt, A. T., Jr.
—; Coombe, R. D.: Azide Mechanisms for the Production of NCl Metastables, 741

Reimschussel, W.
Reynolds, W. L.
—; Kooda, K.; Florine, B.; Johnson, N.; Thielman, K.: Demetallation of $\alpha,\beta,\gamma,\delta$-Tetrakis(*p*-sulfophenyl)porphiniron(III) in Mineral Acid–Alcohol–Water Media, 97
Richard, C.
—; Boiveaut, A.; Martin, R.: H_2S-Promoted Thermal Isomerization of Butene-2 *cis* to Butene-1 or Butene-2 *trans* around 500°C, 921
—; Martin, R.: Influence of Butadiene-1,3 on Ethanal Pyrolysis at 495°C, 1021
Richter, G. See Knoll, H., 623
Rigaux, D. See Huybrechts, G., 253
Ring, M. A. See Newman, C. G., 661
Robertshaw, J. S.
—; Smith, I. W. M.: Rate Data for $O + OCS \rightarrow SO + CO$ and $SO + O_3 \rightarrow SO_2 + O_2$ by a New Time-Resolved Technique, 729
Rubio, M. A. See Lissi, E. A., 871
Rust, F.
—; Stevens, C. M.: Carbon Kinetic Isotope Effect in the Oxidation of Methane by Hydroxyl, 371

Savage, C. M. See Niki, H., 915, 1001
Schliebs, R. See Knoll, H., 623
Schurath, U. See Lippmann, H. H., 547
Segaud, C. See Paul, H., 637
Shakhnazaryan, I. K. See Arustamyan, A. M., 55
Sivakamasundari, S.
—; Ganesan, R.: Kinetics and Mechanism of the Bromination of Aromatic Compounds by *N*-Bromosuccinimide in Solution, 837

Skurlatov, Yu.
Chain Ion Molecular Mechanism of Ascorbic Acid Oxidation with Hydrogen Peroxide. Cu^{3+} Ion as a Chain Carrier, 347
Slebocka-Tilk, H. See Mikolajczyk, M., 979
Smith, I. W. M. See Robertshaw, J. S., 729
Sokolova, N. A. See Moshkina, R. I., 315
Stepanov, A. A. See Bol'Shakov, B. V., 271
Stevens, C. M. See Rust, F., 371
—; Kaplan, L.; Gorse, R.; Durkee, S.; Compton, M.; Cohen, S.; Bielling, K.: The Kinetic Isotope Effect for Carbon and Oxygen in the Reaction CO + OH, 935
Strausz, O. P. See Ekwenchi, M. M., 431
Szilagyi, I. See Szirovicza, L., 113
Szirovicza, L.
—; Szilagyi, I.: Thermal Decomposition of 2,2-Propane-d_2. CH_3CDCH_3 Radical Isomerization, 113

Takacs, G. A. See Taylor, W. D., 231
Taylor, S. E. See Jones, J. R., 141
Taylor, W. D.
—; Allston, T. D.; Moscato, M. J.; Fazekas, G. B.; Kozlowski, R.; Takacs, G. A.: Atmospheric Photodissociation Lifetimes for Nitromethane, Methyl Nitrite, and Methyl Nitrate, 231
Temps, F. See Hack, W., 851
Thielman, K. See Reynolds, W. L., 97
Toby, S.
—; Ullrich, E.: Reaction of Carbon Monoxide with Ozone: Kinetics and Chemiluminescence, 535
Tolkatchev, V. A. See Bol'Shakov, B. V., 271
Tseng, F-H.
—; White, J. M.: Titration of Oxygen Chemisorbed on Platinum: Experiment and Simulation, 417

Uchida, Y. See Hiraishi, M., 387
Ullrich, E. See Toby, S., 535
Uma, K. V.
—; Mayanna, S. M.: Kinetics of Oxidation of Benzyl Alcohol by Sodium *N*-Chloro-*p*-Toluenesulfonamide, 861

Vankeerberghen, J. See Huybrechts, G., 253
Van Mele, B. See Huybrechts, G., 253

Wagner, H. GG. See Hack, W., 851
Waters, D. N. See Gore, P. H., 107
Weissman, M.
—; Benson, S. W.: Mechanism of Pyrolysis of C_2Cl_6, 403
White, J. M. See Tseng, F-H., 417
Winer, A. M. See Atkinson, R., 779

Yakobson, B. I. See Burshtein, A. I., 261
Yasunaga, T. See Hiraishi, M., 387
Yumura, M.
—; Asaba, T.; Matsumoto, Y.; Matsui, H.: Thermal Decomposition of Ammonia in Shock Waves, 439

Zanocco, G. See Lissi, E. A., 871
Zinbo, M. See Hamilton, E. J., Jr., 577
Ziolkowski, F. See Daly, N. J., 241

Subject Index to Volume XII

Communications to the Editor are indicated by the letter C following the page number.

Abstraction, of H and D atoms by methyl radicals from 2,2-propane-d_2, 113
—, of H atom by alkyl radicals from alcohols in glasses, 271
—, of H atoms by CCl_3 radicals, 379
—, of H atoms by Cl atoms from mono- and dichloromethane, kinetics of, 1001
—, of H atoms by di-*tert*-butylnitroxide, 871
—, of H atoms from various compounds by atoms and free radicals, calculation of, 123, 183
Abstraction reactions, of methyl with azomethane and with propane, 1031
Addition, of CCl_3 radicals to chloroethylenes, 883
—, of methyl radicals to acetone, 623
Alkane pyrolysis, computational analysis of, 605
Atmospheric carbon monoxide cycle, 935
Atmospheric chemistry, the reaction $HO_2 + NO$ in the gas phase, 851
Atmospheric photodissociation lifetimes, of nitromethane, methyl nitrite, and methyl nitrate, 231
Atomic resonance absorption spectroscopy, in the study of thermal decomposition of ammonia in shock waves, 439
Autooxidation, of benzil and pyridine, 1055
—, of benzoin, 1045
—, of pentaerythrityl tetraheptanoate, kinetics and mechanism of, 577
Azide reactions, nitrogen monohalides produced in, 741

Beer–Lambert law for the methyl radical, 949
Benzyl peroxy radicals, apparent first-order termination of, 29

Calculation, of rate constants and Arrhenius parameters for H-atom abstraction reactions, 123, 183
Carbonyl oxides, role in termination of peroxy radicals, 43
Catalysis, of the iodate-peroxide reaction, 671
—, of oxidation of ascorbic acid with H_2O_2, by Cu^{2+} ions, 347
Chemiluminescence, in reaction of ozone with carbon monoxide, 535
Chlorination, of formaldehyde and methylchloride, 915
Chlorine atom reaction, of formylchloride, 915
Combination, of CCl_3 radicals with cyclohexyl or *n*-hexyl radicals, 217
—, of methylperoxy radicals with nitrogen dioxide, 1
Combination reaction, of O atoms with O_2 to form O_3, 469
Complexation, kinetics of aluminium acetate, 387
Computer modeling of the generation and fast reactions of the methylperoxy radical, 949
Computer simulation, of $CH_3 + O_2 \rightarrow CH_3OO$, 949
—, of the generation of CH_3O and HOO radicals, 949
Concerted reaction hydrogen-transfer kinetics, 301
Consistency of chemical reactions, computational verification of, 509
C[illegible]yl peroxy radicals, apparent first-order termination of, 29

Decomposition, of ammonia in shock waves using atomic resonance absorption spectroscopy, 439
—, of azoethane and azoizopropane, 993
—, of di-*tert*-butylnitroxide, 871
—, of ethyl-*N*-methylcarbamate, 241
Demetallation, of an iron(III)–porphine complex, 97
Detritiation, of [8-^{3}H] xanthosine, 141(C)
Diels–Alder addition, of ethene to cyclohexa-1,3-diene and its reverse reaction, 253

Electron transfer, to ferric ion, 519
Elementary reaction, of $HO_2 + NO$ in the gas phase, 851
Emulsion, autooxidation in, 1045
Excess energy distribution, in the photolysis of methylbutene, 17
Extinction coefficients, of the methyl and methylperoxy radicals, 949

First-order reactions, dual-path sequence, 107
Flash photolysis, of azomethane in the absence and presence of oxygen, 949
—, of azomethane in the presence of oxygen and nitrogen dioxide, 1
Flash photolysis resonance fluorescence technique, used to study the $O + O_2$ combination reaction, 469
Fragmentation, of methallyl radicals, 17
FTIR (Fourier Transform IR) spectroscopy, in the study of chlorine atom reaction of formylchloride, 915

Germane, H-atom production in decomposition of, 661
—, heterogeneous aspects of decomposition, 661
—, mechanism of decomposition of, 661

Herzberg *I* bands, 501
Hydrogen exchange, use of, 141(C)

Hydrolysis, of purine nucleosides, 141(C)

Ion-pair catalysis, in emulsion systems, 1045, 1055
Isomerization, of 2-deuteroisopropyl radical, 113
Isotope effect, carbon, 935
—, oxygen, 935
Isotopic exchange of chlorine-36, Hammett's correlations, 979
Isotopic hydrogen exchange, in xanthosine, 141(C)

Kinetic isotope effect, carbon in reaction of methane with hydroxyl, 371
Kinetics, complexation of aluminium acetate in aqueous solution, 387
—, of eliminations, from ethyl-*N*-methylcarbamate, 241
—, of O,O-diarylphosphorochloridates, 979
—, of O,O-diarylphosphorochloridothionates, 979
—, of oxidation, aliphatic alcohols by silver(II), 285
Kinetics and mechanism, of the autoxidation of pentaerythrityl tetraheptanoate, 577
Kinetic spectroscopy, measurement of rate constants for mutual interaction of methyl and methylperoxy radicals, 949
—, in the study of the reaction of methylperoxy radicals with nitrogen dioxide, 1
Kinetic tracer method, 315

Laser-magnetic resonance, to measure HO_2 + NO in the gas phase, 851

Mass conservation, in a set of chemical reactions, computational verification of, 509
Mechanism, of bromination of aromatics by *N*-bromosuccinimide, 837
—, of ethane oxidation, 315
Mechanism chain, ion-molecular, of ascorbic acid oxidation, by H_2O_2, catalysis by Cu^{2+} ions, 347
Micellar kinetics, 519
Modeling, and smog chamber study of the gas phase NO_x–air photooxidation of toluene and the cresols, 779
Modulation spectroscopy, radical kinetics by means of, 637
Molecular modulation, for kinetics of reaction of chlorine atoms with hydroperoxy radicals, 649
Mutual combination, of methyl radicals, 949
Mutual interaction, of methylperoxy radical, 949

Nomenclature, 771(C)

$O(^3P)$ and OH reactions, prediction of rates by linear free energy correlations, 761(C), 767(C)
Organic nitrates, 771(C)
Organic peroxynitrates, 771(C)
Oscillations, in the hydrogen peroxide–iodate–manganese (II)–sulfuric acid–acetone system, 683
Oscillator strength of the methylperoxy radical, 949
Oxidation, of aliphatic alcohols by silver(II), 285
—, of benzyl alcohol by sodium-*N*-chloro-*p*-toluene sulfonamide, 861
—, of carbon monoxide, computational modeling of the mechanism, 55
—, of carbon monoxide over Pt, 417
—, of i-C_4H_{10}, elementary rate constants for, 169
—, of cyanogen, kinetics of, 159
—, of dimethyl sulfoxide by peroxomonophosphoric acid, kinetics, 491
—, of formic acid and formate ion by bromine in the presence of bromide ion, 393
—, of formic acid by bromine in strongly acid media, 1013
—, mechanism of i-C_4H_{10}, 169
—, of mono- and dichloromethane, Cl-atom sensitized, mechanism of, 1001
—, two-electronic, chain, of ascorbic acid, by H_2O_2, catalysis by Cu^{2+} ions, 347
Oxidation kinetics, of butane 2,3-diol by osmium (VIII), 225

Peroxy radicals, alpha-H Atom containing, mechanism of self-termination, 43
—, Arrhenius parameter for self-reaction of, tertiary, 29
Photochemical smog, a smog chamber and modeling study of NO_x–air reactions, 779
Photolysis, of azomethane/propane mixtures, 1031
—, of chloral, 717
—, of isobutene, 17
—, of methylbutene, 17
—, of pentene, 17
Photooxidation, of 1,3-butadiene and acrolein, 905
—, of toluene and the cresols, a smog chamber and modeling study of, 779
Protiodeacylation, of mesityl ketones, 107
Pyrolysis, of C_2Cl_6, mechanism of, 403
—, of di-*t*-butyl sulfide, inhibited and uninhibited, 699
—, of ethanal in the presence of butadiene-1,3, 1021
—, formation of HCN from pyridine, 569
—, of pyridine, 555

Quaternary salts, ion-pair catalysis, 1045, 1055
Quenching kinetics, 501

Radical, methylperoxy, reaction with nitrogen dioxide, 1
Radical reactions, of olefins, 755
Radicals, self- and cross-termination rate constants of, 637
Radiolysis, of CCl_4 solutions, 379
Rate constant, for mutual combination of methyl radicals and for mutual interaction of methylperoxy radicals, 949
—, of nitric oxide with ozone, 547
—, for reaction of chlorine atoms with hydroperoxy radicals, 649
—, for the reaction of methylperoxy radicals with nitrogen dioxide, 1
Reaction mechanism kinetics, 431
Reaction rate, of carbonyl sulfide with O atoms, 729
—, of oxygen atoms with hydrogen molecules at room temperature, 451
—, role of solvation shell and reactants orientation relaxation, 261
—, of sulfur monoxide with ozone, 729
Recombination, of phenoxyl radicals, 147
Resonance fluorescence, detection of hydroxyl molecules by, 451

RRKM calculation, of germane decomposition pressure fall-off, 661

Simulation, of carbon monoxide oxidation over Pt, 417
Single pulse shock tube, comparative rate technique, applied to measurement of germane decomposition kinetics, 661
Smog chamber, and modeling study of photooxidation of toluene and the cresols, 779
Spectrum, of the methyl radical 215–217 nm absorption and of the methylperoxy radical 215–280 nm absorption, 949
Sulfur monoxide radicals, elementary reactions of, using mass spectrometry, 79
Surface catalyzed recombination, 501

Termination rate constant, for primary and secondary peroxy radicals, 43
—, for tertiary peroxy radicals, 29
Thermal decomposition, of bromocyclobutane, 339
—, of isopropyl radicals to ethylene and methyl radicals, 113
Thermal isomerization, of butene-2 *cis* to butene-1 or butene-2 *trans* in presence of H_2S, 921
Transfer, of Cl atom, the rate constant, 217

Viscosity effect, on phenoxyl radicals recombination, 147

Statement of Ownership, Management and Circulation
(Required by 39 U.S.C. 3685)

1. Title of publication: International Journal of Chemical Kinetics
2. Date of filing: 1 October 1980
3. Frequency of publication: Monthly
   A. Number of issues published annually: 12
   B. Annual subscription price: $175.00
4. Location of known office of publication: John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158
5. Location of the headquarters or general business offices of the publishers: John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158
6. Publisher: John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158
   Editor: Sidney W. Benson, Department of Chemistry, University of Southern California, Los Angeles, CA 90007
   Managing Editor: None
7. Owner: John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158

   The following is a list of stockholders owning or holding 1% or more of John Wiley & Sons, Inc. stock as of August 1980: Cynthia W. Darby, Box 651, Bridgehampton, NY 11932; Hamilton Darby, Box 651, Bridgehampton, NY 11932; D. W. Grout, W. B. Wiley 2nd, and P. B. Wiley, Executors of the Estate of Edward P. Hamilton, c/o Gifford, Woody, Palmer & Searles, 14 Wall Street, New York, NY 10005; W. Bradford Wiley and Deborah Wiley Grout, Trustees, Elizabeth W. Hamilton Trust, 605 Third Avenue, New York, NY 10158; Morgan Guaranty Trust and W. B. Wiley, Trustees under will of Elizabeth Wiley Hamilton, c/o Morgan Guaranty Trust Co., P.O. Box 491, Church St. Station, New York, NY 10008; Jenny R. Proskauer, P.O. Box 238, Church St. Station, New York, NY 10008; W. Bradford Wiley and Peter Booth Wiley, Trustees, f/b/o/ Deborah Elizabeth Wiley Grout, c/o John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158; W. Bradford Wiley and W. Bradford Wiley II, Trustees, f/b/o/ Peter Booth Wiley, 605 Third Avenue, New York, NY 10158; Chemical Bank, P.O. Box 1368, Church St. Station, New York, NY 10008; W. Bradford Wiley and Deborah Wiley Grout, Trustees, f/b/o William Bradford Wiley II, c/o John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158; Hamilton D. Darby and Cynthia Wiley Darby, Trustees under will of William O. Wiley, c/o Gifford, Woody, Palmer & Searles, 14 Wall Street, New York, NY 10005; Adele E. Windheim, 8 Dundee Road, Larchmont, NY 10538; Mrs. Rosamond R. Pennywitt, 49 Bristol Place, Bay Head, NJ 08742; National Bank of Detroit, Woodward Avenue, Detroit, MI; Bank of New York, P.O. Box 11 203, New York, NY 10049; Morgan Guaranty Trust Company, 23 Wall Street, New York, NY 10015; Bradford Trust Company, 95 Wall Street, New York, NY 10005; Midland National Bank, 401 Second Avenue South, Minneapolis, MN 55480; W. Bradford Wiley, 605 Third Avenue, New York, NY 10158.

8. Known bondholders, mortgagees, and other security holders owning or holding one percent or more of the total amount of bonds, mortgages, or other securities: None
10. Extent and nature of circulation

	Average number of copies of each issue during preceding 12 months	Actual number of copies of single issue published nearest to filing date
A. Total number of copies printed	908	900
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	none	none
2. Mail subscriptions	678	676
C. Total paid circulation	678	676
D. Free distribution by mail, carrier or other means, samples, complimentary, and other free copies	32	32
E. Total distribution	710	708
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	198	192
2. Returns from news agents	none	none
G. Total	908	900

11. I certify that the statements made by me above are correct and complete.

Allan Wittman, *Publisher*

12. For completion by publishers mailing at the regular rates: 39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates." In accordance with the provisions of this statute, I hereby request permission to mail the publication named in Item 1 at the phased postage rates presently authorized by 39 U. S. C. 3626.

Allan Wittman, *Publisher*

Index of Compounds to Volume XII

Acetone, methyl radical addition to, 623
Acetylpropionylmesitylene, kinetics of deacylation, 107
Alcohols, aliphatic, oxidation by silver (II), 285
Acrolein, photooxidation with 1,3-butadiene, 905
Alkanes, pyrolysis of, 605
Alkyl radicals, reaction kinetics with alcohol glasses, 271
Alkyl trioxides, role in termination reactions of alkyl radicals, 43
Ammonia, thermal decomposition in shock waves, using atomic resonance absorption spectroscopy, 439
Ascorbic acid, oxidation, in the $Cu2+$–H_2O_2 system, chain ion-molecular mechanism, 347
—, reaction with di-*tert*-butylnitroxide, 871
Aziozopropane, rate coefficient of decomposition, 973
Azoethane, rate coefficient of decomposition, 993
Azomethane, flash photolysis in the absence and presence of oxygen, 1031
—, flash photolysis of in the presence of oxygen and nitrogen dioxide, 1
—, photolysis of azomethane/propane mixtures, 1031

Benzil, autoxidation, 1055
Benzoin, autoxidation, 1045
Benzyl alcohol, reaction with sodium-*N*-chloro-*p*-toluene sulphonamide, 861
Benzyl peroxy radicals, apparent first-order termination of, 29
Bromine, reaction with formic acid, 1013
Bromocyclobutane, decomposition of, 339
N-Bromosuccinimide, in the bromination of aromatics, 837
Butadiene-1,3, influence of, on ethanal pyrolysis at 495°C, 1021
—, photooxidation with acrolein, 905
Butane 2,3-diol, oxidation kinetics of, 225
Butene-2 *cis* thermal isomerization to butene-1 or butene-2 *trans* in presence of H_2S, 721

i-C_4H_{10}, rate constants for oxidation of, 169
Carbon monoxide, reaction with ozone, 535
—, second limit of mixtures with hydrogen and oxygen, 55
Carbontetrachloride, radiolysis of hydrocarbon solutions of, 217
Carbonyl sulfide, reaction with 0 atoms, 729
Chlorine atom, kinetics of reaction with hydroperoxy radical, 649
—, reaction with mono- and di-chloromethane, 1001
Chloroethylenes, addition reactions of, 883
CO, reaction with OH, 935
Copper (3^+), chain carrier, in the system Cu^{2+}–asorbic acid–H_2O_2, 347
Cresols, a smog chamber and modeling study of the gas phase NO_x–air photoxidation of, 779
Cumyl peroxy radicals, apparent first-order termination of, 29
Cyanogen, 159
Cyclohexa-1,3-diene, Diels–Alder reaction with ethene and its reverse reaction, 253
Cyclohexane, radiolysis of solution of CCl_4, 217
Cyclopentene, 301
—, reaction with ethylene, 755

2-Deuteroisopropyl radical, isomerization of, 113
Di-ethyl-hydroxylamine, reaction with di-*tert*-butylnitroxide, 871
Dimethyl sulphoxide, oxidation by peroxomonophosphoric acid, kinetics, 491
Dipropionylmesitylene, kinetics of deacylation, 107
Di-*tert*-butylnitroxide, thermal decomposition of in solution; reactions of with hydrogen donors, 871
Ditertiary butyl sulfide, pyrolysis, 699

Electronically excited oxygen molecules, 501
Ethanal, influence of butadiene-1,3 on, pyrolysis at 495°C, 1021
Ethane, oxidation of, 315
Ethanol, kinetics of formation from ethyl-*N*-methylcarbamate, 241
Ethylene, 301
—, kinetics of formation from ethyl-*N*-methylcarbamate, 241
—, radioactive additive, 315
—, reaction with cyclopentene, 755
Ethyl-*N*-methylcarbamate, kinetics of eliminations from, 241

Ferricyanide ion, 519
First triplet excited oxygen, 501
Formaldehyde, photochlorination, 915
Formic acid, oxidation by Br_2 in strongly acid media, 1013
Formylchloride, chlorine atom reaction, 915
—, formation in oxidation of mono- and di-chloromethane, 1001

Germane, decomposition kinetics in shock waves, 661
—, decomposition kinetics in static systems, 661

Hexaclorethane, yield of, in radiolysis of hydrocarbon solutions of CCl_4, 217
n-Hexane, radiolysis of solution of CCl_4, 217
Hydrogen atoms, abstraction of H atoms from various compounds by atoms and free radicals, 123, 183
Hydrogen cyanide, formation from the pyrolysis of pyridine, 569
Hydrogen molecules, reaction rate with oxygen atoms, 451
Hydrogen peroxide, effect of copper (II) and chloride ion on the reaction with iodate ion in the presence and absence of manganese (II), 671
—, oscillations in the reaction system with iodate-manganese(II)-sulphuric acid and acetone, 683
—, oxidation of ascorbic acid, without formation of intermediate radicals, catalysis by Cu^{2+} ions, 347
Hydroperoxy radical, kinetics of reaction with atomic chlorine, 649
Hydroperoxyl radical, gas phase reaction with NO, 851

Isobutene photolysis, 17

Linear free energy correlations; O(^{3}P) and OH reaction rates predicted by, 761, 767

Methallyl radicals dissociation, 17
Methyl, abstraction reactions of, with azomethane and propane, 1071
Methylamine, kinetics of formation from ethyl-*N*-methylcarbamate, 241
Methylbutene photolysis, 17
Methylchloride, chlorine-atom-initiated oxidation, 915
Methyl isocyanate, kinetics of formation from ethyl-*N*-methylcarbamate, 241
Methyl nitrate, photoabsorption spectrum of, 231
Methyl nitrite, photoabsorption spectrum of, 231
Methylperoxy radical, absorption spectrum and rate constant for mutual interaction, 949
—, as precursors of CH_3O and HOO radicals, 949
—, reaction with nitrogen dioxide, 1
Methyl radical, absorption spectrum and rate constant for mutual combination, 949
—, Beer–Lambert law for, 949
Mono- and di-chloromethane, Cl-atom-sensitized oxidation, rate constant for Cl-atom reaction, 1001

Nitric oxide, gas phase reaction with HO_2, 851
—, reaction with ozone, 547
Nitrogen dioxide, reaction with methylperoxy radicals, 1
Nitrogen monohalides, production of excited states of in azide reactions, 741
Nitromethane, photoabsorption spectrum of, 231

O atoms, combination reaction with molecular oxygen, 469
OH, reaction with CO, 935
O,O-diarylphosphorochloridates, kinetics of, 979
O,O-diarylphosphorochloridothionates, kinetics of, 979
O(^{3}P), OH reactions, prediction by linear free energy correlations, 761, 767
Oxygen atoms, reaction rate with hydrogen molecules, 451
—, reaction with carbonyl sulfide, 729
Oxygen molecules, electronically excited, 501
Ozone, formation by O + O_2 combination, 469
—, reaction with carbon monoxide, 535
—, reaction with nitric oxide, 547
—, reaction with sulfur monoxide, 729

Pentaerythrityl tetraheptanoate, kinetics and mechanism of the autoxidation, 577
Pentene photolysis, 17
Peroxomonophosphoric acid, oxidation of dimethyl sulphoxide, kinetics, 491
Peroxyacl nitrates, 771
Peroxy radicals, Arrhenius parameter for self-reaction of, tertiary, 29
Phenoxyl radicals, recombination of, 147
Propane, photolysis of azomethane/propane mixtures, 1031
2,2-Propane-d_2, thermal decomposition of, 113
Protiodeacylation, kinetics of deacylation, 107
Purine nucleosides, hydrolysis of, detritiation of, 141
Pyridine, autoxidation, 1055
Pyridine, thermal decomposition in a flow system, 555

Sulfur monoxide, reaction with ozone, 729
Sulfur monoxide radicals, 79

Termination rate constant, for tertiary peroxy radicals, 29
$\alpha,\beta,\gamma,\delta$-Tetra(*p*-sulfophenyl)porphineiron (III), demetallation, 97
Toluene, a smog chamber and modeling study of the gas phase NO_x–air photooxidation of, 779
Trichloromethyl radical, addition to chloroethylenes, 883
—, oxidation of, 717

Xanthosine, detritiation of, 141